IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1-20. (Canceled).

21. (New) A communication terminal apparatus comprising:

a first channel estimator that calculates first channel estimation values, corresponding respectively to a plurality of antennas in a base station apparatus, using a plurality of common known signals that are transmitted from the plurality of antennas, respectively;

a phase correction amount calculator that calculates phase correction amounts, based on the first channel estimation values, for use in correction of phase rotations applied to communication channel signals that are transmitted from the plurality of antennas, respectively;

a receiver that receives the communication channel signals, to which the phase rotations are applied at the plurality of antennas respectively and transmitted;

a phase corrector that phase corrects the received communication channel signals or second channel estimation

values, which are calculated from the received communication channel signals, according to the phase correction amounts;

a coherent detector that performs coherent detection on a communication channel signal that is subjected to the phase correction by the phase corrector and a communication channel signal that is not subjected to the phase correction by the phase corrector;

a communication quality measurer that measures communication quality of a coherent detection result of the communication channel signal that is subjected to the phase correction and communication quality of a coherent detection result of the communication channel signal that is not subjected to the phase correction; and

a selector that selects the communication channel signal that presents higher communication quality according to the coherent detection results.

22. (New) A communication terminal apparatus comprising:

a first channel estimator that calculates first channel estimation values, corresponding respectively to a plurality of antennas in a base station apparatus, using a plurality of common known signals that are transmitted from the plurality of antennas, respectively;

a phase correction amount calculator that calculates phase correction amounts, based on the first channel estimation values, for use in correction of phase rotations applied to communication channel signals that are transmitted from the plurality of antennas, respectively;

a receiver that receives the communication channel signals, to which the phase rotations are applied at the plurality of antennas respectively and transmitted;

a phase corrector that phase corrects the received communication channel signals or second channel estimation values, which are calculated from the received communication channel signals, according to the phase correction amounts;

a coherent detector that performs coherent detection on communication channel signals subjected to phase correction by the phase corrector;

a communication quality measurer that measures communication qualities of coherent detection results of the communication channel signals; and

a selector that selects a coherent detection result that presents high communication quality, wherein:

the phase correction amount calculator calculates a plurality of phase correction amounts corresponding respectively to all phase rotations applied to the plurality of antennas;

the phase corrector performs the phase correction of the communication channel signals applying the plurality of phase correction amounts respectively; and

the coherent detector performs coherent detection on the communication channel signals corresponding respectively to the plurality of phase correction amounts.

23. (New) A communication terminal apparatus comprising:

a first channel estimator that calculates first channel estimation values, corresponding respectively to a plurality of antennas in a base station apparatus, using a plurality of common known signals that are transmitted from the plurality of antennas, respectively;

a phase correction amount calculator that calculates phase correction amounts, based on the first channel estimation values, for use in correction of phase rotations applied to communication channel signals that are transmitted from the plurality of antennas, respectively;

a receiver that receives the communication channel signals, to which the phase rotations are applied at the plurality of antennas respectively and transmitted;

a phase corrector that phase corrects the received communication channel signals or second channel estimation

values, which are calculated from the received communication channel signals, according to the phase correction amounts;

a phase prediction value calculator that calculates phase prediction values corresponding respectively to all phase rotations that are applicable to the plurality of antennas; and

a second channel estimator that estimates second channel estimation values from the communication channel signals to which the phase rotations are applied, at the plurality of antennas, wherein:

the phase correction amount calculator finds an angle difference between the phase of each second channel estimation value and each phase prediction value, and calculates the phase correction amounts based on the phase prediction value corresponding to the found angle difference whose angle difference is more likely to occur than the other found angle differences.

24. (New) The communication terminal apparatus of claim 23, further comprising:

a transmitter that transmits the feedback information, representing the phase rotation amounts to be applied to the communication channel signals at the plurality of antennas, wherein:

the phase correction amount calculator weights the likelihood according to the feedback information transmitted.

25. (New) A radio communication method comprising:

(a) calculating first channel estimation values, corresponding respectively to a plurality of antennas in a base station apparatus, using a plurality of common known signals that are transmitted from the plurality of antennas, respectively;

(b) calculating phase correction amounts, based on the first channel estimation values, for use in correction of phase rotations applied to communication channel signals that are transmitted from the plurality of antennas, respectively;

(c) receiving the communication channel signals, to which the phase rotations are applied at the plurality of antennas respectively and transmitted;

(d) phase correcting the received communication channel signals or second channel estimation values, which are calculated from the received communication channel signals, according to the phase correction amounts;

(e) performing coherent detection on communication channel signals subjected to phase correction in step (d);

(f) measuring communication qualities of coherent detection results of the communication channel signals; and

(g) selecting a coherent detection result that presents high communication quality, wherein:

the plurality of phase correction amounts calculated in step (b) correspond respectively to all phase rotations applied to the plurality of antennas,

the phase correction of the received communication channel signals in step (d) is performed by applying the plurality of phase correction amounts respectively, and

the communication channel signals that are coherently detected in step (e) correspond respectively to the plurality of phase correction amounts.

26. (New) A radio communication method comprising:

(a) calculating first channel estimation values, corresponding respectively to a plurality of antennas in a base station apparatus, using a plurality of common known signals that are transmitted from the plurality of antennas, respectively;

(b) calculating phase correction amounts, based on the first channel estimation values, for use in correction of phase rotations applied to communication channel signals that are transmitted from the plurality of antennas, respectively;

(c) receiving the communication channel signals, to which the phase rotations are applied at the plurality of antennas respectively and transmitted;

(d) phase correcting the received communication channel signals or second channel estimation values, which are calculated from the received communication channel signals, according to the phase correction amounts;

(e) performing coherent detection on communication channel signals subjected to phase correction by the phase corrector;

(f) measuring communication qualities of coherent detection results of the communication channel signals; and

(g) selecting a coherent detection result that presents high communication quality, wherein:

the plurality of phase correction amounts calculated in step (b) correspond respectively to all phase rotations applied to the plurality of antennas,

the phase correction of the received communication channel signals in step (d) is performed by applying the plurality of phase correction amounts respectively, and

the communication channel signals that are coherently detected in step (e) correspond respectively to the plurality of phase correction amounts.

27. (New) A radio communication method comprising:

(a) calculating first channel estimation values, corresponding respectively to a plurality of antennas in a base station apparatus, using a plurality of common known signals that are transmitted from the plurality of antennas, respectively;

(b) calculating phase correction amounts, based on the first channel estimation values, for use in correction of phase rotations applied to communication channel signals that are transmitted from the plurality of antennas, respectively;

(c) receiving the communication channel signals, to which the phase rotations are applied at the plurality of antennas respectively and transmitted;

(d) phase correcting the received communication channel signals or second channel estimation values, which are calculated from the received communication channel signals, according to the phase correction amounts;

(e) calculating phase prediction values corresponding respectively to all phase rotations that are applicable to the plurality of antennas; and

(f) estimating second channel estimation values from the communication channel signals to which the phase rotations are applied, at the plurality of antennas, wherein:

step (b) further comprises finding an angle difference between the phase of each second channel estimation value and each phase prediction value, and calculating the phase correction amounts based on the phase prediction value corresponding to the found angle difference whose angle difference is more likely to occur than the other found angle differences.